

Homework Assignment 4 in Geometric Control Theory, MATH666

due to Nov 21, 2011

Problem. Consider a control system

$$\begin{cases} \dot{x}_1 = -x_1 + 4x_2 - 5u \\ \dot{x}_2 = -x_1 + 3x_2 - 4u \end{cases}, u \in [-1, 2].$$

Find the attainable set $\mathcal{A}_{(0,0)}$ from the state $(0,0)$ and draw the time optimal synthesis with the target $(0,0)$ in the plane (x_1, x_2) .